



*Short Course on the Application of Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICP-MS) to Earth Sciences*

**Day 1**

9.45-10.00 Maurizio Petrelli (University of Perugia): Welcome to the attendees and Course Introduction

**Day 1 - Morning session: Theory - principles of LA-ICP-MS**

10.00-11.00 Marco de Santis (Thermo Fisher Scientific): Principles of Inductively Coupled Plasma Mass Spectrometry (ICP-MS)

11.00-11.30 Coffee Break

11.30-13.00 Ciprian Stremtan (Teledyne-Photon Machine): Principles of Laser Ablation (LA) for Earth Science Applications

12.30-13.00 Ciprian Stremtan (Teledyne-Photon Machine): Coupling LA and ICP-MS, an introduction and some practical tips

**Day 1 Afternoon session: Practicals - Familiarization with the LA-ICP-MS in the lab**

14.30-16.00 GROUP A

Marco de Santis (Thermo Fisher Scientific): Familiarization with the ICP-MS

Ciprian Stremtan (Teledyne-Photon Machine): Familiarization with the LA system

16.00-17.30 GROUP B

Marco de Santis (Thermo Fisher Scientific): Familiarization with the ICP-MS

Ciprian Stremtan (Teledyne-Photon Machine): Familiarization with the LA system

14.30-16.00 GROUP B Francesco Vetere (University of Perugia): Visit to the sample preparation Facility and to the other Labs of the PVRG group

16.00-17.30 GROUP A Francesco Vetere (University of Perugia): Visit to the sample preparation Facility and to the other Labs of the PVRG group



**Day 2**

**Day 2 Morning session: Theory – Application of LA-ICP-MS to Earth Sciences**

9.00-10.00 Maurizio Petrelli (University of Perugia): Data reduction in LA-ICP-MS for trace element single spot analysis

10.00-11.00 Maurizio Petrelli (University of Perugia): Example applications of LA-ICP-MS to Earth Sciences: an overview.

11.00-11.30 Coffee Break

11.30-13.00 Focus group - Chairman: Daniele Morgavi (University of Perugia) Oral presentations by the attendees.

**Day 2 Afternoon session: Practicals – Prepare and Run LA-ICP-MS experiments**

14.30-16.00 GROUP A Maurizio Petrelli (University of Perugia): a) Prepare and tune the LA-ICP-MS instrumentation a) Check the LA-ICP-MS performances c) Prepare and run automated experiments by LA-ICP-MS

16.00-17.30 GROUP B Maurizio Petrelli (University of Perugia): a) Prepare and tune the LA-ICP-MS instrumentation a) Check the LA-ICP-MS performances c) Prepare and run automated experiments by LA-ICP-MS

**Day 2 Afternoon session: Theory and Practicals – LA-ICP-MS in practice**

14.30-16.00 GROUP

Teresa Ubide (University of Queensland, Australia): Introduction to IOLITE™

16.00-17.30 GROUP B

Teresa Ubide (University of Queensland, Australia): Introduction to IOLITE™



UNIVERSITÀ DEGLI STUDI  
DI PERUGIA

Perugia, 03-05-2019

**Day 3**

**Day 3 Morning session: Theory - Elemental imaging by LA-ICP-MS**

9.00-10.00 Ciprian Stremtan (Teledyne-Photon Machine): Elemental imaging by LA-ICP-MS and its applications in Earth Sciences

10.00-11.00 Teresa Ubide (University of Queensland, Australia): Volcanic crystals as recorders of magma history, eruption triggers, and ascent rates

11.00-11.30 Coffee Break

11.30-13.00 Focus group - Chairman: Daniele Morgavi (University of Perugia) Oral presentations by the attendees.

**Day 3 Afternoon session: Practicals - Data Reduction in LA-ICP-MS imaging**

14.30-16.30 Teresa Ubide (University of Queensland, Australia) - Ciprian Stremtan (Teledyne-Photon Machine): LA-ICP-MS Data reduction for trace element imaging. Introduction to HDIP software.

Sincerely,

Maurizio Petrelli